



U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Airports Safety and Standards

800 Independence Ave., SW
Washington, DC 20591

NOV 01 2019

Dear Airport Sponsor:

This letter provides awareness of recent changes to an internal Federal Aviation Administration (FAA) Order regarding maintenance of Instrument Landing Systems. This information is being shared to ensure you have the same information as the local FAA technicians who service your area.

Background

Large amounts of snow can change the surface area in front of an Instrument Landing System (ILS) localizer (LOC) and consequently may affect the LOC radiated signal. The FAA recently issued an interim change to Joint Order (JO) 6750.49B, Maintenance of Instrument Landing Systems (ILS) Facilities, providing a "Localizer Snow Evaluation and Action" procedure for FAA's ILS system specialists. This procedure advises technicians on what to look for during snow events, and increases awareness of a possible hazardous condition.

In conjunction with this interim change, the FAA also issued an internal joint memorandum that I have enclosed, clarifying the operational considerations and expectations for the FAA System Operations Technicians interaction with Airport Operators. Since the revisions to the Order did not introduce new requirements for airport operators, this should provide clarification on the airport operator's current actions working with the FAA technicians.

Please see the referenced enclosed documents:

1. Memorandum on the interim changes to the JO 6750.49B; and
2. Updated Order, JO 6750.49B, Maintenance of Instrument Landing Systems (ILS) Facilities

If you have any questions or require further assistance on this matter, please contact Phil Davenport in the Airport Safety and Operations division, AAS-300 at (202) 267-7072 or email at Philip.Davenport@faa.gov.

Sincerely,

John R. Dermody, P. E.
Director, Office of Airport Safety and Standards

Enclosures

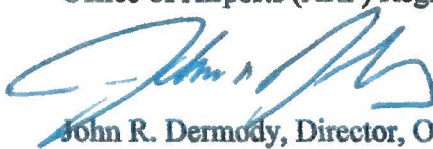


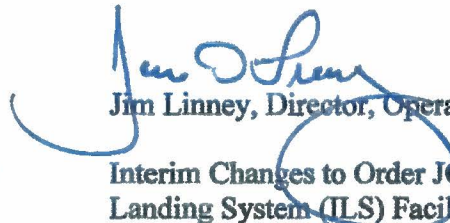
Federal Aviation Administration

Memorandum

Date: OCT 18 2019

To: Airway Transportation System Specialists
Office of Airports (ARP) Regional Directors

From: 
John R. Dermody, Director, Office of Airport Safety and Standards, AAS-1


Jim Linney, Director, Operations Support, AJW-1

Subject: Interim Changes to Order JO 6750.49B, Maintenance of Instrument
Landing System (ILS) Facilities

This memorandum complements a notice of release of interim changes to FAA Order JO 6750.49B, *Maintenance of Instrument Landing System (ILS) Facilities*. These interim changes provide updated guidance on the operation of ILS during snow conditions for the National Airspace System (NAS).

Under the authority of Order 6000.30, NAS Maintenance Policy, and in order to mitigate possible snow impact on the Instrument Landing System (ILS) Localizer signal, the Air Traffic Organization Technical Operations organization (specifically AJW-1) is releasing a Notice to ILS system specialists (N JO 6750.188) that provides a "Localizer Snow Evaluation and Action" procedure. The accumulation of large amounts of snow can change the surface area in front of the Localizer and consequently may affect its radiated signal. This procedure identifies a level of snow accumulation (2 feet) at which point the system specialist needs to start observing the condition of the localizer signal.

This new procedure advises and increases awareness of this possible hazardous condition. The action is to observe and monitor the localizer signal during storm conditions and to correct any variations before it goes out of tolerance. Any mitigation of excessive snow accumulation is a local issue and left to local FAA and airport relationships for coordination.

These changes to the Order are not requiring any additional requirements for the Airport Operator. This memorandum provides suggestions for operations when the interim change goes into effect.

For Airport Operators:

- a. Continue to review and/or update local Snow and Ice Control Plans to ensure access roads are accessible by a system operations technician in order to evaluate and mitigate snow or ice accumulation around ILS Localizers and Glide Slope (GS) antennas and associated clearance areas.
- b. Review any existing Memorandums of Agreement where the airport has accepted responsibility to mitigate the accumulation of snow or ice around the Localizer or GS antenna and associated clearance areas.
- c. Update any notification rosters and methods used to notify a system operations technician when snow or ice accumulation around the Localizer or GS antenna and clearance areas are near or at the critical point.
- d. Confirm the issuance of an appropriate NOTAM by the technician when a system operations technician determines snow or ice accumulations jeopardize signal strength from the Localizer or GS antenna.

(NOTE: For airport-owned ILS components, the airport operator should issue the appropriate NOTAM(s)).

For FAA System Operations Technicians:

- a. Keep the Localizer and/or the GS operational during snow and ice conditions to the maximum extent practicable. For facilities not in alarm, the localizer and/or the GS should not be shut off remotely until the system specialist can field-verify that the conditions have jeopardized the signal.
- b. If the average snow or ice accumulations in the clearance areas exceed specified limits, follow the guidelines of the Order for Localizer and GS until the conditions change and/or are corrected.
- c. Ensure the depth of snowbanks along the edges of the cleared dimensions of the GS snow clearance areas is less than two feet. Additionally, work with the airport operator on snowbank height where clearance requirements for some aircraft or movement areas may dictate lower heights.
- d. Review any existing Memorandums of Agreement where the airport has accepted responsibility to mitigate the accumulation of snow or ice around the Localizer or GS antenna and associated clearance areas.

- e. Provide current telephone recall information for system operations technicians to the airport operator.
- f. When a determination is made that snow or ice accumulations jeopardize signal strength from the Localizer or GS antenna, ensure a NOTAM is issued by the individual with NOTAM authority.

As we update affected guidance documents, some of the content of this memorandum will be included in AC 150-5200-30D, *Airport Field Condition Assessments and Winter Operations Safety*, to reflect the associated interim changes cited in the internal FAA Notice N JO 6750.188, Interim Changes to Order JO 6750.49B, *Maintenance of Instrument Landing System (ILS) Facilities*.

In the interim, please contact; Phillip Davenport at 202-267-7072 or email Phillip.davenport@faa.gov for the Office of Airports; and Tony Delavega at 405-954-3647 or email Tony.delavega@faa.gov for System Operations should you have questions on this subject.

NOTICE

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

Air Traffic Organization Policy

N JO 6750.188

Effective Date:

10/18/2019

Cancellation Date:

10/18/2020

SUBJ: Interim Changes to Order JO 6750.49B, Maintenance of Instrument Landing System (ILS) Facilities

1. **Purpose of This Notice.** This notice releases interim changes to Order JO 6750.49B, Maintenance of Instrument Landing System (ILS) Facilities to reflect the addition of a Snow Evaluation and Action procedure.

2. **Audience.** This document requires actions by the Airway Transportation System Specialist (ATSS) at operational facilities with Facility, Service, and Equipment Profile (FSEP) equipment: LOC (Web Release Only).

Note: This publication is Web Release Only due to budget constraints. A hard copy will not be distributed but may be printed locally. An electronic copy may be accessed by using one of the options in Paragraph 3, Where Can I Find this Notice, and make copies as necessary.

3. **Where Can I Find This Notice?**

a. **FAA Personnel.**

(1) For electronic copies, FAA personnel can use one of the following websites to locate this order.

(a) On the Technical Library website at:

<http://nas.amc.faa.gov/phoenix/views/technicalLibrary.xhtml>

(b) On the Directives website at:

https://employees.faa.gov/tools_resources/orders_notices/

(c) From the My FAA website, select "Tools and Resources" then select 'Orders and Notices'.

(d) On the National Airspace Systems (NAS) Document Distribution Application (DDA) at <http://nas.amc.faa.gov/nasdda/>

(e) The ATSS and all administrative personnel must subscribe to the Auto-Notifications Services for electronic library release notifications at <https://technet.faa.gov/> Administrative offices can print these documents for local use as required.

Distribution: 14C, 14E, 14H, 14N, NS0
(Web Release Only)

Initiated By: AJW-143

(2) Field offices must keep accurate FSEP records, per Order 6000.5E, Facility, Service, and Equipment Profile (FSEP) and address information for distribution of directives. To update records for:

(a) FSEP, utilize your FSEP contact available at this link:

https://employees.faa.gov/org/linebusiness/ato/operations/technical_operations/ajw1/ajw1b/fsep/

(b) Addresses, utilize your Regional Name and Address Coordinator contact available at this link:

<https://ksn2.faa.gov/arc/aml/Home/lcssportal/LCSSPortalDocuments/NameAndAddressPOCList.pdf>

b. Department of Defense (DoD):

(1) All DoD customers must register for an Aeronautical Data Exchange (ADX) website account at <https://www.adx.faa.gov>. When registering, the user must request access to the NAS Engineering tab of the application. The FAA does not distribute hard copies to DoD customers. For problems accessing the ADX website, contact 9-ACT-ADX-PM@faa.gov

(2) For DoD customers who have questions related to this Notice, contact the Landing Team at (405) 954-8378.

4. Cancellation. Not applicable.

5. Action. Use the interim changes in appendixes of this Notice as temporary guidance to Order JO 6750.49B. Reference the interim changes with the current handbook until the Notice expiration date occurs.

6. Background.

a. Configuration Control Decision (CCD) is pending approval and permanent changes to Order JO 6750.49B, Maintenance of Instrument Landing System (ILS) Facilities will be released in the 3rd quarter of FY 2020.

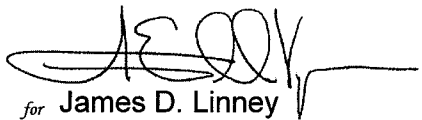
b. This interim Notice provides guidance to the maintenance specialist who maintains single frequency and dual frequency localizer. If the average snow and ice accumulations in the localizer critical area exceed specified limits per Appendix 1, Table 5-3b of this Notice, follow the table guidelines until the snow depth conditions are corrected by snow removal, or correct themselves through melting or other natural processes.

7. Risks.

a. Operational. In compliance with the latest edition of Order JO 6000.50, National Airspace System (NAS) Integrated Risk Management, specialists should assess local system configuration and maintenance actions using the information, instructions or procedures associated with this Notice for Operational Risk Management (ORM) to the NAS. No known operational risks were identified during the evaluation of the content in this Notice.

b. Safety. In compliance with the latest editions of Orders 1100.161, Air Traffic Safety Oversight, and JO 1000.37, ATO Safety Management System, local safety assessment is required when conducting the maintenance and operations activities contained in this Notice. A National Safety Risk Management (SRM) Report information for this Notice is available at http://nas.amc.faa.gov/phoenix/views/technicalDocument.xhtml?&file=6750_188_n_srmrpt.pdf

c. Security. In compliance with the latest edition of Order 1370.121, FAA Information Security and Privacy Program and Policy, the FAA must ensure that security controls implemented and commensurate with the risk and magnitude of the harm that would result from the loss, misuse, denial of service, unauthorized access, or modification of Federal information assets. No known security risks were identified during the evaluation of the content in this Notice.


for James D. Linney
Director, Operations Support

Appendix 1

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Appendix 1. Interim Changes to JO 6750.49B, ILS Maintenance Handbook

* 1-26. Operation of ILS during Snow Conditions.

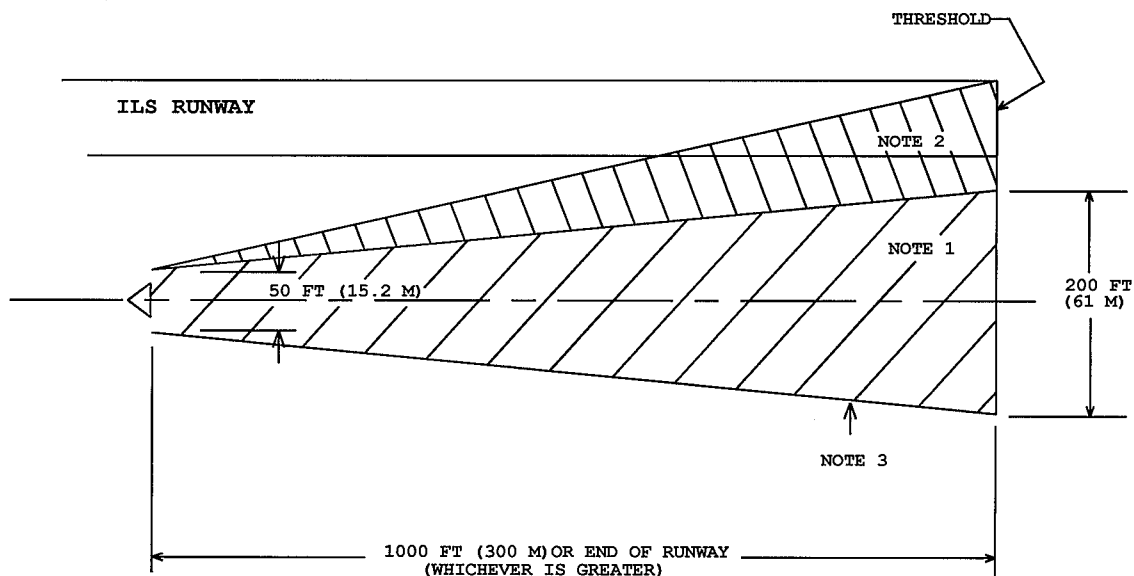
a. **Policy.** This paragraph provides policy for system specialists who maintain localizers (LOC) and image type null-reference (NR), sideband reference (SBR), and capture-effect (CE) Glide Slopes (GS).

(1) The LOC and/or GS must be kept operational during snow and ice conditions to the maximum extent practicable. However, in no case should a facility be allowed to continue operation with any flight inspection reference exceeded or monitored tolerance in an alarm condition without a special flight inspection certifying proper operation.

(2) (GS ONLY) - Past modifications have provided for full integral monitoring to help keep the GS operational due to apparent shifts in path angle with accumulation of snow in the near field. Heavy snow and icing on the antennas can be problematic to the monitoring system and may warrant the installation of antenna heaters. Due to the various types of systems and locations around the nation, installation and/or operation of GS antenna heaters has been delegated to the service areas.

(3) Refer to paragraph 1-23, Emergency Operation of ILS Facilities.

b. **Snow Accumulations.** If the average snow and ice accumulations in the critical areas exceed specified limits, follow the guidelines of Table 5-3d for localizer, or Figure 1-1 and Table 5-4 for glide slope, until the conditions revert or are corrected.



Note 1: Category I GS snow clearance area.

Note 2: Category II and III GS snow clearance area.
The area depicted under Note 1 shall also be cleared.

Note 3: The depth of snowbanks along the edges of the cleared area shall be less than two feet.

Figure 1-1. Glide Slope Snow Clearance Areas

* **c. Pilot Reports.** When notified by a second aircraft that a LOC or GS is malfunctioning, follow the required action in Order 6000.15. *

d. Implementation of Full Integral Monitors. All image-type GS facilities now use full integral monitoring, which is essentially insensitive to snow/ice buildup. Selected GS facilities located in areas that have significant snow/ice accumulations are provided snow depth monitors to alert the system specialist when accumulations approach prescribed limits. Refer to paragraph 5-199 for snow removal policy.

1-27. Configuration Management. All ILS systems are under configuration management control as defined in Order 1800.66, Configuration Management Policy, and NAS-MD-001. Any changes to the baseline configuration or requests for deviation from the National Airspace System (NAS) must go through the NAS change proposal (NCP) process.

1-28. Vehicle Traffic on Airports. All vehicles used in the performance of maintenance duties and operating on any part of an airport shall comply with Order 6000.15, General Maintenance Handbook for NAS Facilities.

1-29. Safety Areas.

a. Frangibility Requirements for ILS Components. The requirements governing frangibility of ILS components are in the Federal Air Regulations (FAR), part 139, paragraph 309(b)(4). This paragraph states, "Each certificate holder must maintain its safety areas as follows: ... (4) No objects may be located in any safety area, except for objects that need to be located in a safety area because of their function. These objects must be constructed, to the extent practical, on frangibly mounted structures of the lowest practical height, with the frangible point no higher than 3 inches above grade." The enforcement and interpretation of this regulation is the responsibility of the Airports Division. The size and location of the safety areas are defined in Advisory Circular AC 150/5300-13, "Airport Design".

b. Safety Areas. The GS is usually outside the runway safety area, which usually extends 250 ft (76 m) each side of runway centerline. The LOC antenna array may or may not be in the runway safety area, which usually extends 1000 ft (300 m) past the stop end of the runway. Antenna systems mounted inside the safety area must be of frangible construction. The actual size of a particular runway safety area is unique to that airport, and no conclusion should be made concerning a specific airport based upon the general statements made in this paragraph.

c. Frangible Antenna Arrays. The log-periodic, traveling wave antenna (TWA), and end-fire antenna arrays are classified as frangible. The V-ring antenna systems have been retrofitted with frangible antenna masts at many locations. The frangibility issue is addressed at the initial installation of an ILS on any airport by the engineer responsible for the siting of the ILS. After installation and facility commissioning it is the responsibility of the FAA system specialist to promptly report any non-frangible structures associated with the ILS that are installed within the airport safety areas.

Chapter 5. Maintenance Procedures

Section 3. Special Maintenance Procedures (Continued)

Subsection 2. Localizers (Continued)

*** 5-176. Localizer Snow Evaluation and Action**

a. Object. This procedure provides guidance to the system specialist for various snow and ice conditions.

b. Discussion.

(1) Signal samples used to analyze and control operation are obtained and processed to provide an indication of what the airborne user is receiving. Monitoring signals in lieu of actual far-field signals are obtained from integral samples. The integral monitor sample and far-field indication are essentially unaffected by small amounts of snow accumulation. When snow accumulation reaches a particular depth described in Table 5-3d, Localizer Snow Depth, the action described for that snow depth shall be taken. Upon subsequent snow events, reevaluation is required.

(2) System specialists are required to visually scrutinize the LOC critical area, and take action to remove any existing problems. There is no substitute for the specialist's skills in observation and analysis of the LOC critical area for snow/ice depths, drifts, piling, or obstruction to signals, and exercising prudent judgments regarding requisite action.

(3) When evaluating localizer snow accumulation, special attention should be given to changes in the lateral slope of the terrain between the localizer and the stop end of the runway. That is, if the lateral terrain slopes and the snow tends to level it or conversely, if the terrain is flat and the snow tends to create a slope. Changes in this lateral slope tend to push the centerline null, intensifying the snow effect.

c. Test Equipment Required.

(1) A yardstick or other means of measuring snow depth.

(2) A means of permanently marking the ground check points.

d. Detailed Procedure.

(1) Follow the guidance listed in Table 5-3d for snow depths. Visually inspect the LOC critical area. Determine the snow depth by visually averaging peaks and valleys, the use of a physical probing, maybe necessary.

(2) The depth of snowbanks along the edges of the clearance area must not exceed 2 feet (0.6m). If there is a need for the system specialist to mitigate snow accumulations, coordinate with the airport operator to ensure any removal of snow or modifications to the snow covered surface by the system specialist does not negatively impact airport safety. The following features may exist within the ILS clearance areas: Runway and taxiway safety areas, taxiway object free areas, or clearance for aircraft operations (for example: wing-tip / engine clearance may dictate lower heights). The dimensions of these areas can vary from runway to runway and taxiway to taxiway.

*

* Additionally, at some airports Engineered Materials Arresting Systems (EMAS) may be installed at the end of a runway(s), possibly within the Localizer Critical Area. These systems are intended to capture an aircraft during an excursion and therefore cannot support the weight of a vehicle or most equipment without causing damage. Coordination with the airport operator is necessary to access and/or modify snow accumulations on these surfaces

Table 5-3d. Localizer Snow Depth

< 24 in (60 cm)	≥24 in (60 cm)
<p>Technician evaluate for proper action per paragraph 5-176.</p> <p>Restore full service and category.</p> <p>Reevaluate upon subsequent snow events.</p>	<p>All ILS Categories</p> <p>Facilities with Far Field Monitors (FFM) remain in service as long as the FFM is not in alarm.</p> <p>Facilities without Far Field Monitors (FFM) verify the signal with a normal ground check.</p> <p>Contact Service Area Operations Engineering Support Group (OESG) prior to removing from service.</p> <p>Reevaluate upon subsequent snow events.</p>

5-177. thru 5-189. Reserved.

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